



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2012-1001; Directorate Identifier 2012-NM-020-AD; Amendment 39-17453; AD 2013-09-11]

RIN 2120-AA64

Airworthiness Directives; Cessna Aircraft Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain Cessna Aircraft Company Model 500, 501, 550, 551, S550, 560, 560XL, and 650 airplanes. This AD was prompted by multiple reports of smoke and/or fire in the tailcone caused by sparking due to excessive wear of the brushes in the air conditioning (A/C) motor. This AD requires inspecting to determine if certain A/C compressor motors are installed and to determine the accumulated hours on certain A/C drive motor assemblies; repetitive replacement of the brushes in the drive motor assembly, or, as an option to the brush replacement, deactivation of the A/C system and placard installation; and return of replaced brushes to Cessna. We are issuing this AD to prevent the brushes in the A/C motor from wearing down beyond their limits, which could result in the rivet in the brush contacting the commutator causing sparks and consequent fire and/or smoke in the tailcone with no means to detect or extinguish the fire and/or smoke.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For service information identified in this AD, contact Cessna Aircraft Co., P.O. Box 7706, Wichita, KS 67277; telephone 316-517-6215; fax 316-517-5802; email citationpubs@cessna.textron.com; Internet <https://www.cessnasupport.com/newlogin.html>. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Christine Abraham, Aerospace Engineer, Electrical Systems and Avionics Branch, ACE-119W, FAA, Wichita Aircraft Certification Office (ACO), 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, Kansas 67209; phone: 316-946-4165; fax: 316-946-4107; email: wichita-cos@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a supplemental notice of proposed rulemaking (SNPRM) to amend 14 CFR part 39 to include an airworthiness directive (AD) that would apply to the specified products. That SNPRM published in the Federal Register on February 11, 2013 (78 FR 9636). The original NPRM (77 FR 59146, September 26, 2012) proposed to

require an inspection to determine if certain A/C compressor motors are installed and to determine the accumulated hours on certain A/C drive motor assemblies; repetitive replacement of the brushes in the drive motor assembly, or, as an option to the brush replacement, deactivation of the A/C system and placard installation; and return of replaced brushes to Cessna. The SNPRM proposed to revise the optional A/C system deactivation procedure.

Comments

We gave the public the opportunity to participate in developing this AD. We received no comments on the SNPRM (78 FR 9636, February 11, 2013) or on the determination of the cost to the public.

Conclusion

We reviewed the relevant data and determined that air safety and the public interest require adopting the AD as proposed—except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the SNPRM (78 FR 9636, February 11, 2013) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the SNPRM (78 FR 9636, February 11, 2013).

Interim Action

We consider this AD interim action. The reporting data required by this AD will enable us to obtain better insight into brush wear. The reporting data will also indicate if the replacement intervals we established are adequate. After we analyze the reporting data received, we might consider further rulemaking.

Model 525 airplanes are not subject to this AD. We are currently considering requiring similar actions for these airplanes.

Costs of Compliance

We estimate that this AD will affect 1,987 airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection, drive motor assembly brush replacement, parts return, and reporting	11 work-hours X \$85 per hour = \$935 per replacement cycle	\$252 per replacement cycle	\$1,187 per replacement cycle	\$2,358,569 per replacement cycle
Optional fabrication of placard for deactivation	1 work-hour X \$85 per hour = \$85	\$0	\$85	\$168,895
Optional deactivation or reactivation for Model 560XL airplanes (370 airplanes)	1 work-hour X \$85 per hour = \$85	\$0	\$85	\$31,450

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority

because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

2013-09-11 **Cessna Aircraft Company**: Amendment 39-17453; Docket No. FAA-2012-1001; Directorate Identifier 2012-NM-020-AD.

(a) Effective Date

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to the following Cessna Aircraft Company airplanes, certificated in any category.

(1) Model 500 and 501 airplanes, serial numbers (S/N) 0001 through 0689 inclusive.

(2) Model 550 and 551 airplanes, S/Ns 0002 through 0733 inclusive, and 0801 through 1136 inclusive.

(3) Model S550 airplanes, S/Ns 0001 through 0160 inclusive.

(4) Model 560 airplanes, S/Ns 0001 through 0707 inclusive, and 0751 through 0815 inclusive.

(5) Model 560XL airplanes, S/Ns 5001 through 5300 inclusive.

(6) Model 650 airplanes, S/Ns 0200 through 0241 inclusive, and 7001 through 7119 inclusive.

(d) Subject

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 21, Air Conditioning.

(e) Unsafe Condition

This AD was prompted by multiple reports of smoke and/or fire in the tailcone caused by sparking due to excessive wear of the brushes in the air conditioning (A/C)

motor. We are issuing this AD to prevent the brushes in the A/C motor from wearing down, which could result in the rivet in the brush contacting the commutator causing sparks and consequent fire and/or smoke in the tailcone with no means to detect or extinguish the fire and/or smoke.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Inspection for Part Number (P/N)

Within 30 days or 10 flight hours after the effective date of this AD, whichever occurs first: Inspect the A/C compressor motor to determine whether P/N 1134104-1 or P/N 1134104-5 is installed. A review of airplane maintenance records is acceptable in lieu of this inspection if the part number of the A/C compressor motor can be conclusively determined from that review.

(h) Inspection of Compressor Hour Meter and Maintenance Records

If, during the inspection required by paragraph (g) of this AD, any A/C compressor motor is found having P/N 1134104-1 or P/N 1134104-5: Within 30 days or 10 flight hours after the effective date of this AD, whichever occurs first, determine the hour reading on the A/C compressor hour meter as specified in paragraphs (h)(1) and (h)(2) of this AD.

(1) Inspect the number of hours on the A/C compressor hour meter. And,

(2) Check the airplane logbook for any entry for replacing the A/C compressor motor brushes with new brushes, or for replacing the compressor motor or compressor condenser module assembly (pallet) with a motor or assembly that has new brushes.

(i) If the logbook contains an entry for replacement of parts, as specified in paragraph (h)(2) of this AD, determine the number of hours on the A/C compressor motor brushes by comparing the number of hours on the compressor motor since

replacement and use this number in lieu of the number determined in paragraph (h)(1) of this AD. Or,

(ii) If, through the logbook check you cannot positively determine the number of hours on the A/C compressor motor brushes, as specified in paragraph (h)(2) of this AD, use the number of hours on the A/C compressor hour meter determined in paragraph (h)(1) of this AD or presume the brushes have over 500 hours time-in-service.

(i) Replacement

Using the hour reading on the A/C compressor hour meter determined in paragraph (h) of this AD, replace the A/C compressor motor brushes with new brushes at the later of the times specified in paragraphs (i)(1) and (i)(2) of this AD. Thereafter, repeat the replacement of the A/C compressor motor brushes at intervals not to exceed 500 hours time-in-service on the A/C compressor motor. Do the replacement in accordance with the applicable Cessna maintenance manual subject specified in paragraphs (j)(1) through (j)(7) of this AD.

(1) Before the accumulation of 500 total hours time-in-service on the A/C compressor motor.

(2) Before further flight after doing the inspection required in paragraph (h) of this AD.

(j) Replacement Maintenance Manual Information

Use the instructions in the applicable Cessna maintenance manual subject specified in paragraphs (j)(1) through (j)(7) of this AD to do the replacement required by paragraph (i) of this AD.

(1) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 10, dated April 23, 2012, of the Cessna Model 550 Bravo Maintenance Manual.

(2) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 8, dated April 23, 2012, of the Cessna Model 550 Maintenance Manual.

(3) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 20, dated April 23, 2012, of the Cessna Model 560 Maintenance Manual.

(4) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 13, dated April 23, 2012, of the Cessna Model 560XL Maintenance Manual.

(5) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 30, dated April 23, 2012, of the Cessna Model 650 Maintenance Manual.

(6) Subject 4-11-00, Replacement Time Limits-General, of Chapter 4, Airworthiness Limitations, Revision 4, dated April 23, 2012, of the Cessna Model 500/501 Maintenance Manual.

(7) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 7, dated April 23, 2012, of the Cessna Model S550 Maintenance Manual.

(k) Deactivation of A/C System

In lieu of replacing the A/C compressor motor brushes as required by this AD, deactivate the A/C system as specified in paragraph (k)(1), (k)(2), or (k)(3) of this AD, as applicable.

(1) For all airplanes except Model 560XL and 650 airplanes: Pull the vapor cycle A/C circuit breaker labeled "AIR COND," do the actions specified in paragraphs (k)(1)(i) and (k)(1)(ii) of this AD, and document deactivation of the system in the airplane logbook, referring to this AD as the reason for deactivation. While the system is

deactivated, the airplane operator must remain aware of operating temperature limitations specified in the applicable airplane flight manual.

(i) Fabricate a placard that states: "A/C DISABLED" with 1/8-inch black lettering on a white background.

(ii) Install the placard on the airplane instrument panel within 6 inches of the A/C selection switch.

(2) For Model 650 airplanes: Pull the vapor cycle A/C circuit breaker labeled "FWD EVAP FAN," do the actions specified in paragraphs (k)(1)(i) and (k)(1)(ii) of this AD, and document deactivation of the system in the airplane logbook, referring to this AD as the reason for deactivation. While the system is deactivated, the airplane operator must remain aware of operating temperature limitations specified in the applicable airplane flight manual.

(3) For Model 560XL airplanes: Do the actions specified in paragraphs (k)(1)(i) and (k)(1)(ii) of this AD, and document deactivation of the system in the airplane logbook, referring to this AD as the reason for deactivation. While the system is deactivated, the airplane operator must remain aware of operating temperature limitations specified in the applicable airplane flight manual. Remove the fuse limiter that supplies power to the A/C compressor motor by doing the actions specified in paragraphs (k)(3)(i) through (k)(3)(viii) of this AD, and return to the airplane to service by doing the actions specified in paragraphs (k)(3)(ix) through (k)(3)(xiii) of this AD.

(i) Open the battery door.

(ii) Disconnect the main battery connector and remove external electrical power.

(iii) Tag the battery and external power receptacle with a warning tag that reads: "WARNING: Do not connect the battery connector during the maintenance in progress."

(iv) Gain access to the J-Box through the tailcone access door.

(v) Remove the wing nuts that attach the cover to the J-Box.

- (vi) Remove the J-Box cover.
- (vii) Remove nuts securing compressor fuse limiter (reference designator HZ116, P/N ANL130) to the bus bar.
- (viii) Remove the compressor motor fuse limiter from the terminals and retain for future reinstallation once the compressor motor brushes have been replaced.
- (ix) Install fuse limiter nuts on the terminals and torque to 100 inch-pounds +/- 5 inch-pounds.
- (x) Install the J-Box cover with wing nuts.
- (xi) Remove the warning tag on the battery and external power receptacle.
- (xii) Connect the battery and restore electrical power to the airplane.
- (xiii) Close the tailcone access door.

(l) Reactivation of A/C System

If an operator chooses to deactivate the A/C system, as specified in paragraph (k) of this AD, and then later chooses to return the A/C system to service: Before returning the A/C system to service and removing the placard, perform the inspection specified in paragraph (h) of this AD, and do the replacements specified in paragraph (i) of this AD, at the times specified in paragraph (i) of this AD. Return the A/C system to service by doing the actions specified in paragraph (l)(1), (l)(2), or (l)(3) of this AD, as applicable.

(1) For all airplanes except Model 560XL and 650 airplanes: Push in the vapor cycle A/C circuit breaker labeled "AIR COND," remove the placard by the A/C selection switch that states "A/C DISABLED," and document reactivation of the system in the airplane logbook.

(2) For Model 650 airplanes: Push in the vapor cycle A/C circuit breaker labeled "FWD EVAP FAN," remove the placard by the A/C selection switch that states "A/C DISABLED," and document reactivation of the system in the airplane logbook.

(3) For Model 560XL airplanes: Remove the placard by the A/C selection switch that states “A/C DISABLED,” and document reactivation of the system in the airplane logbook. Re-install the fuse limiter by doing the actions specified in paragraphs (l)(3)(i) through (l)(3)(viii) of this AD, and return to the airplane to service by doing the actions specified in paragraphs (l)(3)(ix) through (l)(3)(xiii) of this AD.

(i) Open the battery door.

(ii) Disconnect the main battery connector and remove external electrical power.

(iii) Tag the battery and external power receptacle with a warning tag that reads: “WARNING: Do not connect the battery connector during the maintenance in progress.”

(iv) Gain access to the J-Box through the tailcone access door.

(v) Remove the wing nuts that attach the cover to the J-Box.

(vi) Remove the J-Box cover.

(vii) Remove the fuse limiter nuts on the bus bar terminals for the fuse limiter.

(viii) Install the compressor motor fuse limiter (reference designator HZ116, P/N ANL130).

(ix) Install fuse limiter nuts on the terminals and torque to 100 inch-pounds \pm 5 inch-pounds.

(x) Install the J-Box cover with wing nuts.

(xi) Remove the warning tag on the battery and external power receptacle.

(xii) Connect the battery and restore electrical power to the airplane.

(xiii) Close the tailcone access door.

(m) Parts Return and Reporting Requirements

For the first two A/C compressor motor brush replacement cycles on each airplane, send the brushes that were removed to Cessna Aircraft Company, Cessna Service Parts and Programs, 7121 Southwest Boulevard, Wichita, KS 67215. Provide the brushes and the information specified in paragraphs (m)(1) through (m)(6) of this AD within 30 days after the replacement, if the replacement was done on or after the effective date of this AD, or within 30 days after the effective date of this AD, if the replacement was done before the effective date of this AD.

(1) The model and serial number of the airplane.

(2) The part number of the motor.

(3) The part number of the brushes, if known.

(4) The elapsed amount of motor hours since the last brush/motor replacement, if known.

(5) If motor hours are unknown, report the elapsed airplane flight hours since the last brush/motor replacement and indicate that motor hours are unknown.

(6) The number of motor hours currently displayed on the pallet hour meter.

(n) Parts Installation Limitation

As of the effective date of this AD, no person may install an A/C compressor motor having P/N 1134104-1 or P/N 1134104-5, unless the inspection specified in paragraph (h) of this AD is done before further flight, and the replacements specified in paragraph (i) of this AD are done at the times specified in paragraph (i) of this AD.

(o) Special Flight Permit Limitation

Operation of the A/C system is prohibited while flying with a special flight permit issued for this AD.

(p) Paperwork Reduction Act Burden Statement

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 5 minutes per response, including the time for reviewing instructions, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave. SW, Washington, DC 20591, Attn: Information Collection Clearance Officer, AES-200.

(q) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Wichita Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in the Related Information section of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(r) Related Information

For more information about this AD, contact Christine Abraham, Aerospace Engineer, Electrical Systems and Avionics Branch, ACE-119W, FAA, Wichita Aircraft Certification Office (ACO), 1801 Airport Road, Room 100, Mid-Continent Airport,

Wichita, Kansas 67209; phone: 316-946-4165; fax: 316-946-4107;
email: wichita-cos@faa.gov.

(s) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 10, dated April 23, 2012, of the Cessna Model 550 Bravo Maintenance Manual. The revision level of Chapter 4 is identified only on the title page of Chapter 4.

(ii) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 8, dated April 23, 2012, of the Cessna Model 550 Maintenance Manual. The revision level of Chapter 4 is identified only on the title page of Chapter 4.

(iii) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 20, dated April 23, 2012, of the Cessna Model 560 Maintenance Manual. The revision level of Chapter 4 is identified only on the title page of Chapter 4.

(iv) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 13, dated April 23, 2012, of the Cessna Model 560XL Maintenance Manual. The revision level of Chapter 4 is identified only on the title page of Chapter 4.

(v) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 30, dated April 23, 2012, of the Cessna Model 650 Maintenance Manual. The revision level of Chapter 4 is identified only on the title page of Chapter 4.

(vi) Subject 4-11-00, Replacement Time Limits-General, of Chapter 4, Airworthiness Limitations, Revision 4, dated April 23, 2012, of the Cessna Model

500/501 Maintenance Manual. The revision level of Chapter 4 is identified only on the title page of Chapter 4.

(vii) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 7, dated April 23, 2012, of the Cessna Model S550 Maintenance Manual. The revision level of Chapter 4 is identified only on the title page of Chapter 4.

(3) For Cessna service information identified in this AD, contact Cessna Aircraft Co., P.O. Box 7706, Wichita, KS 67277; telephone 316-517-6215; fax 316-517-5802; email citationpubs@cessna.textron.com; Internet <https://www.cessnasupport.com/newlogin.html>.

(4) You may view this service information at FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Renton, Washington, on April 26, 2013.

Ali Bahrami,
Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

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